

examination of the present claims on the merits would not impose a serious burden on the Examiner.

Alleged Patentably Distinct Species in Claim Group I

As noted above, the Office Action alleges that Invention I contains claims directed to patentably distinct species of the claimed invention, indicating that:

- A) Claims 2-6 relate to control channel;
- B) Claims 7-9 relate to the controllable coupling circuitry;
- C) Claims 11-16 relate to the sequence/combination of antenna beams;
- D) Claims 17-20 relate to channel type; and
- E) Claims 21-24 relate to antenna type.

Each of these groups of dependent claims are directed to a different element of independent claim 1.

Applicants respectfully point out that “[c]laims to be restricted to different species must be mutually exclusive,” M.P.E.P. § 806.04(f). Accordingly, the general test for when claims may be restricted to different species is when one claim recites limitations which are found in a first species but not in a second and a second claim recites limitations which are found in a second species but not in the first. “This is frequently expressed by saying that claims to be restricted to different species must recite the mutually exclusive characteristics of such species,” M.P.E.P. § 806.04(f). However, the various species of claim Group I identified in the requirement for election are not mutually exclusive.

Applicants respectfully contend that various ones of the control channel elements recited in the claims of Group I(A) may be used in conjunction with various ones of the controllable coupling circuitry elements recited in the claims of Group I(B), with various ones of the sequence and/or combinations of antenna beams recited in Group I(C), with various ones of the channel types recited in Group I(D), and/or with various ones of the antenna types recited in Group I(E). Applicants further respectfully contend that various ones of the controllable coupling circuitry elements recited in the claims of Group I(B) may be used with various ones of the sequence and/or combinations of antenna beams recited in Group I(C), with various ones of the channel types recited in Group I(D), and/or with various

ones of the antenna types recited in Group I(E). Further, Applicants respectfully contend that various ones of the sequence and/or combinations of antenna beams recited in Group I(C) may be used with various ones of the channel types recited in Group I(D), and/or with various ones of the antenna types recited in Group I(E). Finally, Applicants respectfully contend that various ones of the channel types recited in Group I(D) may be used in conjunction with various ones of the antenna types recited in Group I(E).

As but a single example, one of ordinary skill in the art would readily recognize that a base station system, wherein a different sector control channel is associated with each sector of the base station as recited by claim 2, might have controllable coupling circuitry adapted to provide independently controllable coupling of each one of a plurality of discrete simultaneous communications using a first communication channel to antenna beams of the system as recited by claim 7. This same base station might also make use of a sequence or combination of coupling antenna beams determined at least in part in consideration of mutually exclusive antenna beam pairs with respect to simultaneous use of the first communication channel as recited by claim 11. Meanwhile, as recited by claim 17, the first channel used by the base station might be a time division duplex channel that includes a forward link portion and a reverse link portion, wherein the forward and the reverse link portions are of different durations for a first remote station in communication with the base station and a second remote station in communication with the base station. Finally, the multiple narrow beam antenna system of this base station might be a fixed multiple beam antenna system as recited by claim 21 or an adaptive array antenna system as recited by claim 22. The multiple narrow beam antenna system might provide a plurality of substantially non-overlapping antenna beams as recited by claim 23 and/or provide a plurality of other substantially overlapping antenna beams from claim 24.

From at least the above reasons, it is clear that the inventions of the claims identified with each of proffered species of groups I(A)-(D) are not mutually exclusive of one another. Thus, the claims of groups I(A)-(D) cannot be restricted as species as set forth in the requirement for election.

Alleged Patentably Distinct Species in Claim Group III

As also noted above, the Office Action alleges that Invention III contains claims directed to patentably distinct species of the claimed invention, indicating that:

- A) Claims 33-37, 58 relate to controllable coupling circuitry;
- B) Claims 39-44, 59-61 relate to mutually exclusive antenna beam pairs;
- C) Claims 45-49, 62-64 relate to antenna beam pairs providing reduced signal quality; and
- D) Claims 50, 52-56 relate to channel type.

As also noted above, claims to be restricted to different species must be mutually exclusive. Thus, the general test for when claims may be restricted to different species is when one claim recites limitations which are found in a first species but not in a second and a second claim recites limitations which are found in a second species but not in the first. As also noted above, this is frequently expressed by saying that claims to be restricted to different species must recite the mutually exclusive characteristics of such species. Applicants respectfully contend that the various species of claim Group III, identified in the requirement as subgroups A through D, are not mutually exclusive.

Applicants respectfully contend that various ones of the controllable coupling circuitry elements recited in the claims of Group III(A) may be used in a wireless communication system wherein a controller may make a determination with respect to utilizing a communication channel simultaneously by comparing data throughput available using the antenna beam pairs providing reduced signal quality of Group III(C) with a data throughput available using an antenna beam of a mutually exclusive antenna beam pair of Group III(B), as recited by claim 46. Such a wireless communication system may further employ various ones of the channel types recited in Group III(D). Additionally, Applicants respectfully contend that the various ones of the antenna beam pairs providing reduced signal quality recited in Group III(C) may be comprised of mutually exclusive antenna beam pairs recited in the claims of Group III(B). Also, mutually exclusive antenna beam pairs recited in the claims of Group III(B) may comprise the antenna beam pairs providing reduced signal quality recited in Group III(C). Further, various ones of these antenna pairs may be used in conjunction with various ones of the various channel types recited in Group III(D).

As an example in relation to independent claim 32, one of ordinary skill in the art would readily recognize that a wireless communication system employing circuitry controllably coupling base station radio circuitry to a multiple narrow beam antenna system as recited by claim 33, might also employ a controller adapted to optimize system data throughput through, as recited in claim 46, a comparison of a data throughput available using an antenna beam of a mutually exclusive antenna beam pair as recited by claim 39 with a data throughput available using antenna beam pairs providing reduced signal quality as recited by claim 45. Further, the system might communicate with a number of remote stations utilizing a second communication channel simultaneously in different sectors as recited in claim 50.

As an example in relation to independent claim 57, one of ordinary skill in the art would readily recognize that a wireless communication system employing circuitry controllably coupling base station radio circuitry to a multiple narrow beam antenna system to provide adjustable sector boundaries as recited by claim 58, might, as recited by claim 63, also employ a controller adapted to optimize system data throughput through a comparison of a data throughput available using an antenna beam of a mutually exclusive antenna beam pair as recited by claim 59 with a data throughput available using antenna beam pairs providing reduced signal quality as recited by claim 62.

From at least the above reasons, it is clear that the inventions of the claims identified with each of proffered species of groups III(A)-(D) are not mutually exclusive of one another. Thus, the claims of groups III(A)-(D) cannot be restricted as species as set forth in the requirement for election.